

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Plant Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Pediomelum pentaphyllum* Rydberg
COMMON NAME: Three-nerved Scurf-pea; Chihuahua scurf pea
SYNONYMS: *Psoralea pentaphyllum*; *Psoralea pentaphylla* L.; *Psoralea trinervata* (Rydberg) Standley; *Pediomelum trinervatum* Rydberg
FAMILY: Fabaceae

AUTHOR, PLACE OF PUBLICATION: Rydberg. 1919. N. Amer. Fl. 24:23.

TYPE LOCALITY: Mexico: Vicinity of Chihuahua City.

TYPE SPECIMEN: E. Palmer. 5-10 June 1908.

TAXONOMIC UNIQUENESS: From NatureServe (2001), "A member of a group of legumes sometimes placed in the genus *Psoralea* and sometimes placed in the genus *Pediomelum*; in his 1994 checklist, Kartesz places this species (and other similar species) in *Pediomelum* rather than *Psoralea*. This plant was formerly called *Pediomelum trinervatum* (or *Psoralea trinervata*); the name *P. pentaphyllum* was formerly incorrectly applied to the common Mexican plant now called *P. palmeri* (information from Peter Warren, Arizona Field Office, TNC, letter 28Nov94, based on revision by Grimes, Mem. N.Y. Bot. Gard. 61:82-84, 1990). John Kartesz agreed (phone discussion with Larry Morse, 31Aug95) that *Pediomelum pentaphyllum*, as treated in his 1994 checklist, is known in the United States only from Arizona and New Mexico, and (1/98) Texas, with no current records. A different use of the name *Pediomelum pentaphyllum*, with authorship of "(B. Juss. ex L.) J. Grimes" instead of "(L.) Rydb." is given as the species-level name for the var. *scaposum*, considered by Kartesz to be a synonym of *Pediomelum hypogaeum* var. *scaposum* of Texas. *P. palmeri* has recently been renamed *P. ockendonii*."

DESCRIPTION: Glandular, strigose, subcaulescent perennial herbs to 30.0 cm (12.0 in.) tall from thick, deep taproots. Usually has one pseudoscape, to 4.0 cm (1.6 in.), sometimes branched. Main stems to 4.0 cm (1.6 in.), densely tomentose, often branched at base. Leaves palmately or pseudopalmately 5-6 foliolate. Petioles 8.5-15.0 cm (3.4-6.0 in.) long with hairs (tomentose) about 3.0 mm (0.12 in.) long (stems appear furry). Leaves lanceolate, rhombic or slightly oblanceolate, upper surface brown- to black-glandular and uniformly strigose to pubescent only on veins and margins, lower surface strigose and with glands usually of lighter color. Inflorescence short- to long-ovoid, with 6-9 nodes and 3 flowers per node. Flowers 14.0-18.0 mm (0.56-0.72 in.), petals purple; calyx tube 4-5 mm long, the upper 4 lobes 10-12 mm long; fruits enclosed in the calyx, the beak broad, 10-15 mm long, projecting beyond the calyx lobes; seeds large, reticulate.

AIDS TO IDENTIFICATION: The plants are short stemmed, nearly acaulescent, with grayish, or whitish, pubescent herbage, tuberous roots, and the calyx lobes are very unequal (NatureServe 2001). In Arizona, *P. megalanthum* is similar, but has more perfectly palmately compound (rather than shortly pinnately compound) leaves with 5-8 leaflets that are often broadly rounded at the tip (Spellenberg 1999).

ILLUSTRATIONS: Color photo (Spellenberg 1999, in <http://nmrareplants.unm.edu/reports/pedpen.htm>)

TOTAL RANGE: Southeastern Arizona; Hidalgo County, New Mexico; western Texas; and Chihuahua, Mexico. Currently extant populations have only been located in Hidalgo County, New Mexico (NatureServe 2001).

RANGE WITHIN ARIZONA: Cochise County: Just west of Chiricahua National Monument. Possibly Graham County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: In the past, it was reported to flower in July and August following summer rains (up for about a month). However in New Mexico, this species actually commences flowering in April and apparently dies back by August (NatureServe 2001). Therefore, populations in other locations should be re-surveyed in the Spring (NatureServe 2001). Spellenberg (1999), reports that it “Flowers in April and May, and again in July and August, depending on rainfall.”

BIOLOGY: Dies back to tuberous roots every year.

HABITAT: Desert grasslands.

In New Mexico, *P. pentaphyllum* tended to be associated with mesquite. This observation and the fact that there was evidence of recent, shallow, water channels around plants leads to speculation that the areas where the plants were growing may be more subject to flooding during rain and/or may have slightly more favorable ground water availability. At the present time this suggestion is very speculative but should be considered in future surveys. (NatureServe 2001).

The habitat requirements of this species are poorly documented outside of New Mexico. Generally, the substrates are sandy, loamy soils. It is notable that *P. pentaphyllum* plants are generally found in bare areas between other plants. (NatureServe 2001).

ELEVATION: 3,600 - 4,500 feet (1098-1373 m) in Arizona. Elsewhere, 4,400 - 6,600 ft (1342-2013 m).

EXPOSURE:

SUBSTRATE: In New Mexico, they are generally found on sandy, loamy soils, but the proportion of small sized (0.5-1.0 cm diameter) gravel ranges from sparse to moderate. (NatureServe 2001).

PLANT COMMUNITY: Per NatureServe (2001), Chihuahuan scurfpea plants are found in at least three different community types:

1. A honey mesquite (*Prosopis glandulosa*)/littleleaf sumac (*Rhus microphylla*) community. Other shrubs that can be in equal or lower abundance are creosote bush (*Larrea tridentata*), mariola (*Parthenium incana*), Torrey yucca (*Yucca torreyi*) and soaptree yucca (*Yucca elata*).
2. A sparsely distributed, but dominant, creosote bush (*Larrea tridentata*) community with mesquite, longleaf jointfir (*Ephedra trifurca*), snakeweed (*Gutierrezia micrantha*), and desert zinnia (*Zinnia acerosa*) in lower abundance.
3. An open grassland habitat with burrograss (*Scleropogon brevifolius*) and scattered mesquite.

POPULATION TRENDS: Unknown. In 1998, 3-5 extant occurrences were found in New Mexico. It was first collected around 1740 in Mexico, and has only been collected 5 times in the last 250 years. The collections were widely separated localities: 1 from northern Mexico, 1 from southwestern New Mexico, 1 from western Texas, and 2 (including what was the most recent collection before 1998) made in 1963 from southeastern Arizona. Many botanists had looked for it since 1963, but the known specimen labels lacked precise locality and habitat information and so provided few clues that would aid in the search. Given its fairly broad geographic range, it seemed likely that the species did survive somewhere. It was described as being common, at least locally, on a 1936 specimen label from Arizona. (NatureServe 2001).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:	None (USDI, FWS 1996) [Category 2 under <i>Pediomelum pentaphyllum</i> , USDI FWS 1993] [Category 2 under <i>Pediomelum trinervatum</i> , USDI, FWS 1990] [Category 2 under <i>Psoralea trinervata</i> , USDI FWS 1985]
STATE STATUS:	None
OTHER STATUS:	Forest Service Sensitive (USDA, FS Region 3 1990, 1999) None (USDI, BLM AZ 2005) [Bureau of Land Management Sensitive under <i>P. trinervatum</i> (USDI, BLM 2000)]

MANAGEMENT FACTORS: The impact of common management practices such as grazing, burning, mowing, herbicide use, and mechanical soil disturbance on this species is unknown (NatureServe 2001).

PROTECTIVE MEASURES:

SUGGESTED PROJECTS: Survey needed as this plant likely to be found on BLM lands. Since flowering may occur in April than in August, as what occurs in New Mexico, surveys should be conducted during this spring time period in former and potential habitat.

LAND MANAGEMENT/OWNERSHIP: NPS - Chiricahua National Monument. Possibly BLM land.

SOURCES OF FURTHER INFORMATION

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Warren, P.L. 1994. BLM Safford District, Rare Plant Workshop, November 14-16. Tucson, Arizona.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

Peter Warren - Tucson, Arizona.

ADDITIONAL INFORMATION:

Revised: 1990-12-14 (SR)
1991-10-19 (BKP)
1994-12-19 (DBI)
2001-12-27 (SMS)

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